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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/913,884	03/08/2002	Jean-Sebastien Coron	032326-161	5848

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EXAMINER	
HENNING, MATTHEW T	
ART UNIT	PAPER NUMBER
2131	

DATE MAILED: 06/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/913,884	CORON ET AL.	
	Examiner	Art Unit	
	Matthew T. Henning	2131	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 March 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *24-37* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *24-37* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *08 March 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

This action is in response to the communication filed on 3/29/2006.

DETAILED ACTION

Response to Arguments

Applicant's arguments with respect to claims 24-37 have been considered but are moot in view of the new ground(s) of rejection.

All rejections and objections not set forth below have been withdrawn.

Claims 1-23 have been cancelled and claims 24-37 have been examined.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 27 and 34 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claims recite that a plurality of successive rounds of DES comprise only the first three rounds and the last three rounds. However, DES has 16 rounds and therefore the combination of **only** the first three rounds and the last three rounds only is not a plurality of **successive** rounds. As such, the ordinary person would be unable to determine whether the scope of the claim. Therefore, the examiner will assume that the claim was meant to read that the plurality of successive rounds included the first three and last three rounds, as this can still fit the scope of successive rounds.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 24-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kocher et al. (US Patent Number 6,278,783) hereinafter referred to as Kocher, and further in view of Ohki et al. (US Patent Number 6,615,354) hereinafter referred to as Ohki.

Regarding claim 24, Kocher disclosed a countermeasure method in an electronic component that implements the DES cryptographic algorithm in which multiple rounds of calculation are performed on input data (See Kocher Abstract), wherein each round of calculation includes at least the following operations: a first permutation of data (See Kocher Col. 10 Lines 55-60); manipulation of the permuted data by a secret key (See Kocher Col. 10 Line 61 – Col. 11 Line 5); a table look-up operation based on the manipulated data (See Kocher Col. 11 Lines 6-7); and a second permutation of data (See Kocher Col. 11 Lines 7-11), but Kocher failed to disclose wherein, for a plurality of successive rounds of said algorithm, at least one of said first and second permutations of data comprises the following steps: selecting a first random value having the same size as the data being permuted, performing an exclusive-or operation between the data being permuted and the first random value to generate a second random value, executing said permutation operation on each of the first and second random values, to generate respective first and second random results, and performing an exclusive-or operation between said first and second random results to produce a final permuted result.

Ohki teaches that in order to protect against current analysis in a smartcard, processes, including permutation, should be performed using disturbance data (See Ohki Col. 3 Paragraph 2). Ohki further describes that the permutation operations should be altered by selecting a first random value having the same size as the data being permuted, performing an exclusive-or operation between the data being permuted and the first random value to generate a second random value, executing said permutation operation on each of the first and second random values, to generate respective first and second random results, and performing an exclusive-or operation between said first and second random results to produce a final permuted result (See Ohki Col. 3 Lines 32-63).

It would have been obvious to the ordinary person skilled in the art at the time of invention to employ the teachings of Ohki in the DES system of Kocher by performing the permutation processing according to the disturbance data method of Ohki. This would have been obvious because the ordinary person skilled in the art would have been motivated to protect the permutation processing from current analysis.

Regarding claim 31, Kocher disclosed an electronic component that implements the DES cryptographic algorithm in which multiple rounds of calculation are performed on input data, said electronic component including a microprocessor that executes the following operations during each round of calculation (See Kocher Abstract): a first permutation of data (See Kocher Col. 10 Lines 55-60); manipulation of the permuted data by a secret key (See Kocher Col. 10 Line 61 – Col. 11 Line 5); a table look-up operation based on the manipulated data (See Kocher Col. 11 Lines 6-7); and a second permutation of data (See Kocher Col. 11 Lines 7-11), but Kocher failed to disclose wherein, for a plurality of successive rounds of said algorithm, at least

one of said first and second permutations of data comprises the following steps: selecting a first random value having the same size as the data being permuted, performing an exclusive-or operation between the data being permuted and the first random value to generate a second random value, executing said permutation operation on each of the first and second random values, to generate respective first and second random results, and performing an exclusive-or operation between said first and second random results to produce a final permuted result.

Ohki teaches that in order to protect against current analysis in a smartcard, processes, including permutation, should be performed using disturbance data (See Ohki Col. 3 Paragraph 2). Ohki further describes that the permutation operations should be altered by selecting a first random value having the same size as the data being permuted, performing an exclusive-or operation between the data being permuted and the first random value to generate a second random value, executing said permutation operation on each of the first and second random values, to generate respective first and second random results, and performing an exclusive-or operation between said first and second random results to produce a final permuted result (See Ohki Col. 3 Lines 32-63).

It would have been obvious to the ordinary person skilled in the art at the time of invention to employ the teachings of Ohki in the DES system of Kocher by performing the permutation processing according to the disturbance data method of Ohki. This would have been obvious because the ordinary person skilled in the art would have been motivated to protect the permutation processing from current analysis.

Regarding claims 25 and 32, Kocher and Ohki disclosed that both of said first and second permutation operations in each of said plurality of successive rounds (See the rejection of claims 24 and 31 above).

Regarding claims 26 and 33, Kocher and Ohki disclosed that the first and second permutation operations utilize different respective first random values (See Ohki Col. 13 Line 66 – Col. 14 Line 3).

Regarding claims 27 and 34, Kocher and Ohki disclosed that said plurality of successive rounds comprise only the first three and the last three rounds of said algorithm (See Ohki Col. 13 Line 66 – Col. 14 Line 3).

Regarding claims 28 and 35, Kocher and Ohki disclosed that the manipulation operation performed during said plurality of successive rounds comprises the following steps: performing an exclusive-or operation between said secret key and a third random value having the same size as said key, to generate a fourth random value; performing bit-by-bit operations on each of said third and fourth random values to produce a pair of intermediate keys; manipulating the result of said first permutation operation with one of said intermediate keys to produce an intermediate result, and manipulating said intermediate result with the other of said intermediate keys to produce an output data item (See Kocher Col. 10 Lines 16-24 and the rejections of claims 24 and 31 above).

Regarding claims 29 and 36, Kocher and Ohki disclosed that said manipulating steps comprise exclusive-or operations (See Ohki Col. 3 Lines 32-36).

Regarding claims 30 and 37, Kocher and Ohki disclosed that said bit-by-bit operations comprise a key permutation operation, a shift operation and a compression permutation operation (See Kocher Col. 10 Lines 16-24).

Conclusion

Claims 1-23 have been cancelled and claims 24-37 have been rejected.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew T. Henning whose telephone number is (571) 272-3790. The examiner can normally be reached on M-F 8-4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz Sheikh can be reached on (571) 272-3795. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CHRISTOPHER REVAK
PRIMARY EXAMINER

6/11/06

Matthew Henning
Assistant Examiner
Art Unit 2131
6/9/2006